

**Notice of Allowability**

Application No.

09/886,281

Examiner

Enrique L Santiago

Applicant(s)

SAITO ET AL.

Art Unit

2671

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to July 22, 2004.
2. ☒ The allowed claim(s) is/are 1-4 and 9-18.
3. ☒ The drawings filed on 22 June 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

**DETAILED ACTION**

**Allowable Subject Matter**

Claims 1-4 and 9-18 are allowed.

The following is an examiner's statement of reasons for allowance:

Claims 1-4 are allowed, because the prior art alone or in combination among other limitations does not teach or suggest to one of ordinary skill in the art "A ...method for compressing vertex coordinate data of a plurality of polygons approximating a three dimensional shape... dividing vertexes of said plurality of polygons... into a plurality of vertex sets... determining a reference point for each of said vertex sets... obtaining differential data between coordinates of each vertex and coordinates of a corresponding reference point as positional information of said vertex, for each of said vertex sets; and... of storing coordinate data of said reference point and said differential data as compressed data in each of said vertex sets."

Claims 9-11 are allowed, because the prior art alone or in combination among other limitations does not teach or suggest to one of ordinary skill in the art "A data processing method comprising... inputting coordinate data of a reference point in a type of floating point number for a set of vertexes of a plurality of polygons approximating a three-dimensional shape of an image, differential data of a difference between coordinates of each of said vertexes and coordinates of said reference point in a type of integer, and scale value data for providing a reference of magnitude of said differential data in a type of floating point number... type-converting said inputted differential data into floating point numbers... multiplying said type-converted differential data by said scale value data... storing/outputting a multiplication result... as expanded differential data.

Claims 12-14 are allowed, because the prior art alone or in combination among other limitations does not teach or suggest to one of ordinary skill in the art "A data processing method comprising... inputting coordinate data of a reference point in a type of floating point number for a set of vertexes of a plurality of polygons approximating a three-dimensional shape of an image... differential data of a difference between coordinates of each of said vertexes and coordinates of said reference point in a type of floating point number... carrying out affine transformation upon said inputted coordinate data of said reference point while linear transformation in which parallel displacement is excluded from said affine transformation is carried out upon coordinate data of said vertexes sharing said reference point."

Claims 15-18 are allowed, because the prior art alone or in combination among other limitations does not teach or suggest to one of ordinary skill in the art "inputting coordinate data of a reference point in a type of floating point number for a set of vertexes of a plurality of polygons approximating a three-dimensional shape of an image... differential data of a difference between coordinates of each of said vertexes and coordinates of said reference point in a type of floating point number... carrying out perspective transformation upon said vertexes of said plurality of polygons in such a manner that: perspective transformation based on division using a geometric relationship of similarity is carried out upon said reference point so as to obtain perspective-transformed coordinate data of said reference point; and perspective-transformed coordinate data of said vertexes other than said reference point is obtained by use of said perspective-transformed coordinate data of said reference point, and said differential data corresponding thereto in accordance with approximate calculation based on Maclaurin series expansion."

The closest prior art, Fujii et al. US patent no. 6,405,151 B1 teaches, a recording medium for recording image data readable by a computer wherein: said image data has coordinate data of a reference point for a set of vertexes of a plurality of polygons approximating a three-dimensional shape of an image, and differential data between coordinates of each of said vertexes and coordinates of said reference, however said prior art fails to teach the previously stated limitations contained in the applicants claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Enrique L Santiago whose telephone number is 703-306-5908.

The examiner can normally be reached on Monday to Friday from 7:00 A.M. to 3:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman whose telephone number is 703 305-9798, can be reached on Monday to Friday from 7:00 A.M. to 3:30 P.M.

Any response to this action should be mailed to:

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Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

703 872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA, Sixth Floor (Receptionist).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Enrique L. Santiago

October 15, 2004



MARK ZIMMERMAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600